

Table 1

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Oksala A 1977 Finland	25 patients with unilateral acute anterior uveitis The affected eye compared with the normal eye. Eyes examined with a slit lamp and then with ultrasound	Cohort study	Ability to visualise the vitreous body in acute anterior uveitis	7 of 25 eyes unable to see vitreous body because of the formation of posterior synechiae causing the pupil to be miotic in first presentation of acute uveitis 18 of 25 eyes did not present with a change in pupil size or shape	Small number of patients

Clinical bottomline

Patients who present with acute iritis (anterior uveitis) often have no change in pupil size or shape—that is, their pupil appears normal compared with their other eye.

1 Key SN III, Kimura SJ. Iridocyclitis associated with juvenile rheumatoid arthritis. *Am J Ophthalmol* 1975;**80**:425–9.

2 Oksala A. Ultrasonic findings in the vitreous body in patients with acute anterior uveitis. *Acta Ophthalmol* 1977;**55**:287–93.

Use of lidocaine in the gastrointestinal cocktail for the treatment of dyspepsia

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Abstract

A short-cut review was carried out to establish whether lidocaine is a useful adjuvant in the gastrointestinal cocktail of dyspepsia treatment. 325 citations were reviewed, of which two answered the three-part question. The clinical

bottomline is that antacid alone should be used as preferred treatment for dyspepsia. The addition of lidocaine and donnatal can be used on doctor's discretion in patients without contraindications to these agents.

Clinical scenario

A 35-year-old man presents to the emergency department with a history of burning pain radiating from his epigastric area up through his mediastinum that started after dinner. The patient had a history of gastro-oesophageal reflux disease and was placed on prilosec treatment last year, but has stopped taking this for 3 months. You decide to treat this probable case of dyspepsia with a gastrointestinal cocktail, a mixture of lidocaine and antacid, but wonder if adding the lidocaine yields any benefit.

Three-part question

In [patients with dyspepsia who present to the emergency department] is the [GI Cocktail better than Antacid alone] in [relieving pain].

Search strategy

Medline 1966 to June 2006 using OVID interface. [exp Antacids/or exp Lidocaine/or gi cocktail.mp or exp Anesthetics, Local/] AND [dyspepsia.mp or exp Dyspepsia/]

Table 2

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Welling L and Watson W, 1990, US	76 patients in an urban emergency department with symptoms consistent with dyspepsia; 34 receiving antacid alone (Mylanta II), and 39 receiving GI cocktail (Mylanta II and 30 ml 2% viscous lidocaine) with three excluded; pain was measured on an 11 cm scale before, and 30 min after treatment	Randomised control trial	Pain at baseline Improvement in pain at 30 min after treatment	6.4 in the antacid group v 6.7 in the lidocaine group; $p > 0.5$ 0.9 in the antacid group v 4 in the lidocaine group; $p < 0.001$	Interviewers were not blinded to study patients, which may lead to bias; no clinically defined symptoms of dyspepsia to enroll patients
Berman D and Porter R, 2003, US	120 adult patients who presented to an urban tertiary care centre emergency department where the treating doctor ordered a "GI cocktail" Patients either given Donnatal-viscous lidocaine-antacid, Donnatal-antacid, or antacid alone; pain was measured on visual analogue scale; 113 patients completed the study	Prospective double-blind randomised trial	Pain relief in antacid alone group Pain relief in antacid and donnatal group Pain relief in antacid and donnatal group and viscous lidocaine Statistical analysis of results	25 mm decrease in pain 23 mm decrease in pain 24 mm decrease in pain No statistically significant difference in pain relief between the three groups on univariate or multivariate regression analysis	Well-conducted study, but there was no standardised inclusion criteria for the ordering of the GI cocktail and no specific diagnosis was found in each patient

GI, gastrointestinal.

Search outcome

Altogether 325 papers were found, of which two were relevant to the three-part question.

Comments

The papers above give different opinions on the most effective treatment of dyspepsia in the emergency department. Both treatments have been used for years in the emergency department for treating dyspepsia. The addition of lidocaine and sometimes domperidone to make the gastrointestinal cocktail in theory could possibly increase the efficacy of the treatment with the addition of the local anaesthesia and anti-spasmodic agent. The risk of these additions is low with both agents being very well tolerated, and the additional cost of adding these agents is minimal as well. However, with any drug addition there is some added risk and cost, which, with the frequency that the gastrointestinal cocktail is used, could add up substantially. The findings in Watson's study of no clinically relevant reduction in pain with antacid alone goes against previous studies on the treatment of dyspepsia. A bias in the interviewer or population could have skewed their finding that the gastrointestinal cocktail is more effective. With this added the best evidence shows no clinical difference in either treatment.

Clinical bottomline

Antacid alone should be preferred in treatment of dyspepsia. The addition of lidocaine and domperidone can be used on doctor's discretion in patients without contraindications to these agents.

Welling L, Watson W. The emergency department treatment of dyspepsia with antacids and oral lidocaine. *Ann Emerg Med* 1990;19:785-8.

Berman D, Porter R, Graber M. The GI cocktail is no more effective than plain liquid antacid: a randomized, double blind clinical trial. *J Emerg Med* 25:239-44.

Diagnosis of drug overdose by rapid reversal with naloxone

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Abstract

A short-cut review was carried out to establish whether naloxone may have an awakening effect in patients who have not taken opiates, thereby clouding its use as a diagnostic manoeuvre. The clinical bottom line is that opioid antagonists are able to reverse symptoms such as altered consciousness in patients who have not taken an overdose of opiates. It is unclear in which conditions or circumstances this occurs.

Clinical scenario

A 36-year-old man is brought into the emergency department by ambulance with a suspected opiate overdose. He has pinpoint pupils and bradypnoea, which is reversed by administration of naloxone. However, there is no evidence of intravenous drug misuse such as needle track marks. We wonder if naloxone can be used to reverse and therefore diagnose any other conditions.

Table 3

Author, date, country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Kaplan <i>et al</i> , 1999, USA	Adults in nine centres who had suspected opiate overdose. 63 received 1 mg nalmefene, 55 received 2 mg nalmefene and 58 received naloxone	Double-blind randomised study.	Opioid positivity in patients and response to each drug.	Opioid positivity recorded in 1 mg nalmefene (30/63), 2 mg nalmefene (23/55), naloxone (24/58); all patients responded	Does not state the diagnosis in patients who did not have an opiate overdose but responded to the drug; toxicological data were incomplete in 31 patients; opioid-positive patients may have had other causes of altered consciousness; no patient follow-up of late complications
Hoffman <i>et al</i> , 1991, USA	730 patients with altered mental status, who received naloxone in two urban paramedic-base teaching hospitals	Retrospective review of paramedic run sheets, audiotapes and available hospital records	Are clinical criteria and response to naloxone definitive diagnosis of opiate overdose	76% of complete responders, 8% of partial responders and 2% of non-responders had taken an opiate overdose	Does not state the diagnosis of patients who responded to naloxone, but had not taken an overdose of opiates; toxicological analysis was not carried out to prove opiate overdose; there were non-responders and incomplete sampling; the sample size was small for sensitivity and specificity calculations; paramedics may have incorrectly classified patients response to naloxone; overdoses may have been mixed, so response to naloxone would not be as good
Jeffreys <i>et al</i> , 1983	Several studies looking at the use of nalcron in patients with opiate, non-opiate and ethanol poisoning	Review	31 cases of non-opioid poisoning 300 cases of suspected ethanol induced coma Are clinical criteria and response to naloxone definitive diagnosis of opiate overdose	6 patients who had no evidence of opiate intoxication improved with nalcron; 49 showed reversal of coma with nalcron (in 38 cases, ethanol was the sole cause of coma) 25 patients (3.4%) responded completely to nalcron	Database review from national poisons database; potential bias from selective reporting